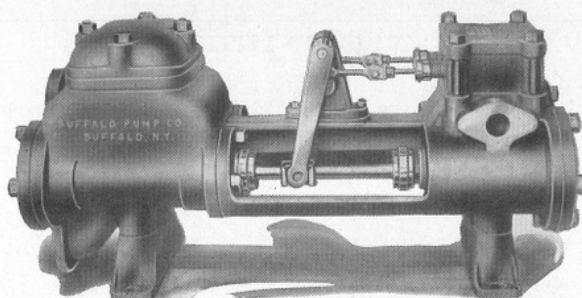


# BUFFALO

Duplex Piston Packed  
Steam Pumps



Bulletin 911

**Buffalo Steam Pump Co.**  
**Buffalo, N. Y.**

New York  
Boston  
Philadelphia  
Pittsburgh

Cleveland  
Detroit  
Chicago  
St. Louis  
Los Angeles

New Orleans  
Atlanta  
Minneapolis  
Denver

**Canadian Blower & Forge Co., Ltd.**  
Kitchener, Ont., Canada

Toronto      Montreal      Calgary      Vancouver      St. John.

## BUFFALO DUPLEX BOILER FEED AND GENERAL SERVICE PUMPS

Piston Packed: 150 lbs. Pressure.

**Use:** General service up to 150 lbs. Best adapted for liquids fairly free from grit. More suitable for high suction lift than plunger pumps. Will handle thick or thin, hot or cold liquids.

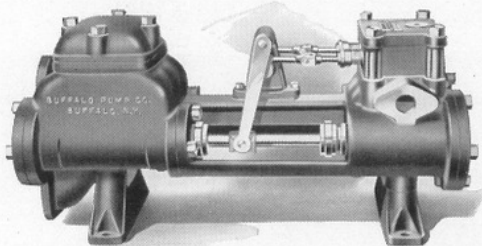


Fig. 705

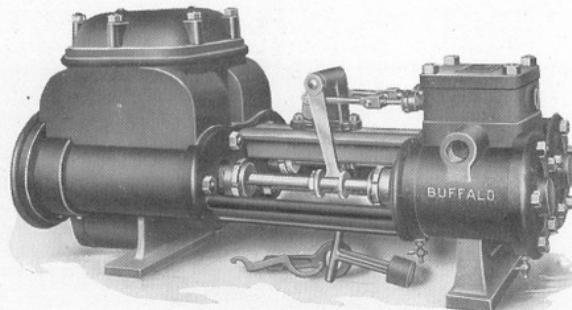


Fig. 706

### STANDARD FITTINGS

**Steam Cylinders:** Cast iron integral with cradle.  
150 lbs. working pressure.

**Steam Valves:** "D" slide valves.

**Valve Gear:** Duplex type, cast steel valve rod heads, rocker arms, links and levers.

**Steam Pistons:** Cast iron, snap rings.

**Piston Rods:** Steel.

**Stuffing Boxes and Glands:** Piston rod boxes, 10 inch stroke and smaller pumps, screwed type.

**Water End:** Cast iron, brass lined cylinders, suction and discharge valves above pistons.

**Water Valves:** Bronze disc type, (rubber if ordered) bronze stems, brass springs.

**Valve Seats:** Bronze, screwed into decks.

**Water Pistons:** Cast iron, removable follower type.

**Wrenches:** All necessary special wrenches.

### EXTRAS

Steam cylinder lagging; pressure or speed governor or regulator; sight feed or mechanically operated lubricator; discharge air chamber; base plate.

Code Word with Steel Piston Rods and Iron Pistons	Figure Number	Diameter of Steam Cylinders, Inches	Diameter of Water Cylinders, Inches	Stroke, Inches	Piston Speed, Feet per Minute	Capacity, Gallons per Minute	Horse Power Boiler at 35 lbs. Evaporat- ion that Pump will Feed at Slow Piston Speed	Minimum lbs. Steam Pressure to Operate Pump Again at Equal Water Pres- sure	Diameter of Pipes, Inches				Approximate Floor Space, Inches
									Steam	Exhaust	Suction	Discharge	
STANDARD TYPE													
DCACH	705*	3	2	3½	45	14	70	50	1½	¾	1¼	1	10x28
DCADS	705*	3½	2¼	4	50	20	100	50	1½	¾	1½	1¼	11x30
DCALB	705*	4½	2¾	4	50	30	150	40	1½	¾	2	1½	13x30
DCANG	705	5¼	3½	5	60	60	250	35	¾	1	2½	2	16x40
DCAST	705	6	4	6	65	78	350	35	1	1½	3	2	17x42
DCAVR	705	7½	5	6	65	120	550	30	1½	2	4	3	23x42
DCBIH	706	7½	4½	10	85	140	650	30	1½	2	4	3	23x61
DCBJU	706	7½	5	10	85	173	800	30	1½	2	4	3	23x61
DCBMY	706	9	5¼	10	85	190	900	30	2	2½	5	4	27x68
DCBOJ	706	10	6	10	85	248	1200	30	2	2½	5	4	27x68
DCBSA	706	10	7	10	85	340	1600	30	2	2½	6	5	27x68
LOW STEAM PRESSURE TYPE													
DCGAK	705*	3	1½	3½	45	8	40	35	1½	¾	1¼	1	10x28
DCGCD	705*	4½	2	4	50	16	80	25	1½	¾	2	1½	13x30
DCGEL	705	5¼	2	5	60	19	95	15	¾	1	2½	2	16x40
DCGGE	705	6	2	6	65	21	105	10	1	1½	3	2	17x42
DCGNG	705*	7½	2½	6	65	33	165	10	1½	2	2½	2	22x44
DCGON	705*	7½	3	6	65	47	200	10	1½	2	2½	2	22x44

Add Code Word JCKAX for Bronze Piston Rods.

Add Code Word JCKDP for Brass Water Pistons.

\*These sizes have water end cast integral with cradle. Other sizes have water end separate from cradle.

## BUFFALO DUPLEX TANK OR LOW PRESSURE PUMPS

Piston Packed: 75 lbs. Pressure.

**Use:** General service up to 75 lbs. Best adapted for liquids fairly free from grit. More suitable for high suction lift than plunger pumps. Will handle thick or thin, hot or cold liquids.

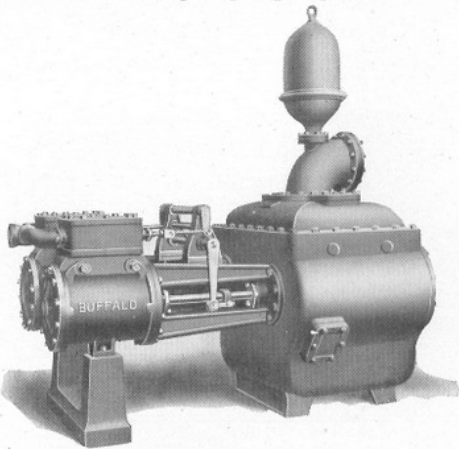


Fig. 731

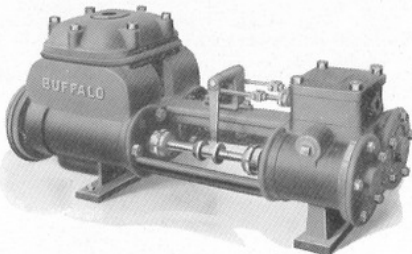


Fig. 736

### STANDARD FITTINGS

**Steam Cylinders:** Cast iron integral with cradle, on sizes  $7\frac{1}{2} \times 10$  and smaller. Separate from cradle on larger sizes. Separate from water end on all sizes. 150 lbs. working pressure.

**Valve Valves:** "D" slide valves.

**Valve Gear:** Duplex type, cast steel valve rod heads, rocker arms, links and levers.

**Steam Pistons:** Cast iron, snap rings.

**Piston Rods:** Steel.

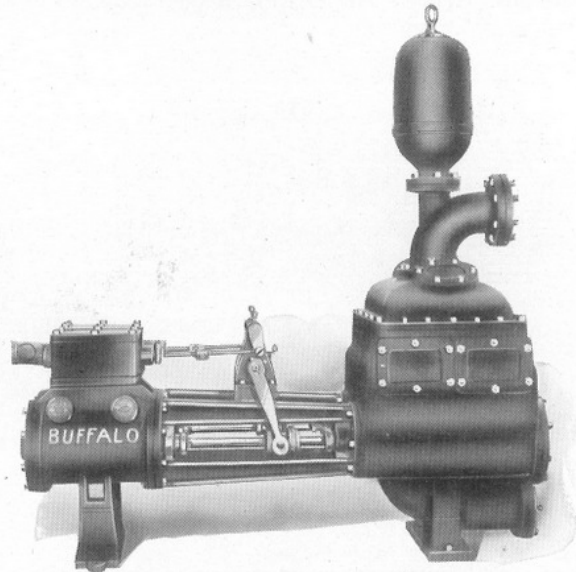


Fig. 737

**Stuffing Boxes and Glands:** Piston rod boxes, screwed type, on 10 inch stroke and smaller pumps. Stud type on large pumps.

**Water End:** Cast iron, brass lined cylinder, suction and discharge valves above pistons, in pumps similar to Fig. 736 and 737. Discharge valves above and suction valves below in pumps similar to Fig. 731.

**Water Valves:** Bronze disc type (rubber if ordered), bronze stems, brass springs.

**Valve Seats:** Bronze, screwed into decks.

**Water Pistons:** Cast iron, removable follower type.

**Wrenches:** All necessary special wrenches.

### EXTRAS

Steam cylinder lagging; pressure or speed governor or regulator; sight feed or mechanically operated lubricator; discharge air chamber on 10 inch stroke and smaller; base plate.

Code Word with Steel Piston Rods and Iron Pistons	Figure Number	Diameter of Steam Cylinders, Inches	Diameter of Water Cylinders, Inches	Stroke, Inches	Piston Speed, Feet per Minute	Capacity, Gallons per Minute	Diameter of Pipes, Inches				Approximate Floor Space, Inches
							Steam	Exhaust	Suction	Discharge	
DGABA	736	$4\frac{1}{2}$	$3\frac{3}{4}$	4	50	57	$\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{2}$	2	14x35
DGAED	736	$5\frac{1}{4}$	$4\frac{3}{4}$	6	65	119	$\frac{3}{4}$	$1\frac{1}{4}$	4	$2\frac{1}{2}$	17x46
DGAJI	736	6	$5\frac{3}{4}$	6	65	174	1	$1\frac{1}{2}$	4	$3\frac{1}{2}$	20x48
DGAMO	736	$7\frac{1}{2}$	6	8	75	219	$1\frac{1}{2}$	2	5	4	24x57
DGAOG	736	$7\frac{1}{2}$	6	10	85	248	$1\frac{1}{2}$	2	5	4	24x61
DGARU	736	$7\frac{1}{2}$	7	10	85	340	$1\frac{1}{2}$	2	6	5	24x65
DGAUH	737	$7\frac{1}{2}$	$8\frac{1}{2}$	12	100	587	$1\frac{1}{2}$	2	8	6	36x74
DGAVY	737	9	$8\frac{1}{2}$	12	100	587	2	$2\frac{1}{2}$	8	6	36x74
DGAYI	737	10	9	12	100	660	2	$2\frac{1}{2}$	8	6	36x74
DGEAD	737	$7\frac{1}{2}$	10	12	100	815	$1\frac{1}{2}$	2	8	6	36x78
DGEBE	737	9	10	12	100	815	2	$2\frac{1}{2}$	8	6	36x78
DGEFI	737	10	10	12	100	815	2	$2\frac{1}{2}$	8	6	36x78
DGEIG	731	9	12	12	100	1170	2	$2\frac{1}{2}$	10	8	44x90
DGEIO	731	10	12	12	100	1170	2	$2\frac{1}{2}$	10	8	44x90
DGEMU	731	12	12	12	100	1170	$2\frac{1}{2}$	3	10	8	44x90
DGEOH	731	12	14	12	100	1595	$2\frac{1}{2}$	3	12	10	46x92
DGERY	731	14	14	12	100	1595	$3\frac{1}{2}$	4	12	10	46x92
DGEUI	737	14	16	18	110	2300	3	4	14	12	56x120
DGEWA	737	16	16	18	110	2300	3	4	14	12	56x120
DGEYK	737	14	18	18	110	2800	3	4	14	12	56x120
DGI AF	737	16	18	18	110	2800	3	4	14	12	56x120
DGIBI	737	18	18	18	110	2800	3	4	14	12	56x120
DGIEG	737	20	18	18	110	2800	4	5	14	12	56x120

Add Code Word JCKAX for Bronze Piston Rods.

Add Code Word JCKDP for Brass Water Pistons.

Add Code Word JCKEV for Brass Lined Stuffing Boxes and Glands in Water End.



## BUFFALO DUPLEX BALL VALVE PUMPS

Piston Packed: 150 and 75 lbs. Pressure

**Use:** Handling viscous liquids up to 150 lbs. and 75 lbs. Especially adapted for pumping tar or other semi-liquids. Will handle hot or cold liquids.

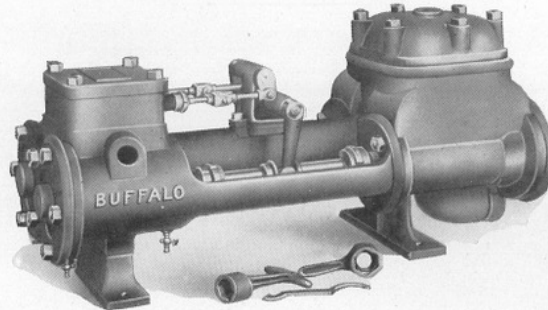


Fig. 711

### STANDARD FITTINGS

**Steam Cylinders:** Cast iron, integral with cradle, separate from water end. 150 lbs. working pressure.

**Steam Valves:** "D" slide valves.

**Valve Gear:** Duplex type, cast steel valve rod heads, rocker arms, links and levers.

**Steam Pistons:** Cast iron, snap rings.

**Piston Rods:** Steel.

**Stuffing Boxes and Glands:** Piston rod boxes 10 inch stroke and smaller pumps, screwed type.

**Water End:** Cast iron, brass lined cylinders, suction and discharge valves above pistons.

**Water Valves:** Brass balls (malleable iron if ordered).

**Valve Seats:** Bronze (malleable iron if ordered) screwed into decks. Fingers on seat hold ball in place.

**Water Pistons:** Cast iron, removable follower type.

**Wrenches:** All necessary special wrenches.

### EXTRAS

Steam cylinder lagging; pressure or speed governor or regulator; sight feed or mechanically operated lubricator; discharge air chamber; base plate.

Code Word with Steel Piston Rods, Iron Pistons, and Brass Ball Valves	Figure Number	Diameter of Steam Cylinders, Inches	Diameter of Water Cylinders, Inches	Stroke, Inches	Piston Speed, Feet per Minute	Capacity, Gallons per Minute	Diameter of Pipes, Inches				Approximate Floor Space, Inches
							Steam	Exhaust	Suction	Discharge	
WATER END SUITABLE FOR 150 LBS. PRESSURE											
DCIMT	711*	3	2	3½	45	14	½	¾	1¼	1	10x28
DCINK	711*	3½	2¼	4	50	26	½	¾	1½	1¼	11x30
DCIRM	711*	4½	2¾	4	50	30	½	¾	2	1½	13x30
DCISP	711	5¼	3½	5	60	60	¾	1	2½	2	16x40
DCJAM	711	6	4	6	65	78	1	1½	3	2	17x42
DCJBV	711	7½	5	6	65	126	1½	2	4	3	23x42
DCJHR	711	7½	4½	10	85	140	1½	2	4	3	23x61
DCJIP	711	7½	5	10	85	173	1½	2	4	3	23x61
DCJKU	711	9	5¼	10	85	190	2	2½	5	4	27x68
DCJUY	711	10	6	10	85	248	2	2½	5	4	27x68
DCJOR	711	10	7	10	85	340	2	2½	6	5	27x68
WATER END SUITABLE FOR 75 LBS. PRESSURE											
DCHUN	711	4½	3¾	4	50	57	½	¾	2½	2	14x35
DCHOP	711	5¼	4¾	6	65	119	¾	1¼	3	2½	17x46
DCHXA	711	6	5¾	6	65	174	1	1½	4	3	20x48
DCHYS	711	7½	6	8	75	219	1½	2	5	4	24x57
DCICS	711	7½	6	10	85	248	1½	2	5	4	24x61
DCILD	711	7½	7	10	85	340	1½	2	6	5	24x65

Add Code Word JCKAX for Bronze Piston Rods.

Add Code Word JCKDP for Brass Water Pistons.

\*These sizes have Water End cast integral with Cradle. Other sizes have Water End separate from Cradle.

## BUFFALO DUPLEX PUMPING ENGINES

**Piston Packed: 150 lbs. Pressure.**

**Use:** General service up to 150 lbs. Best adapted for liquids fairly free from grit. More suitable for high suction lift than plunger pumps. Will handle thick or thin, hot or cold liquids.

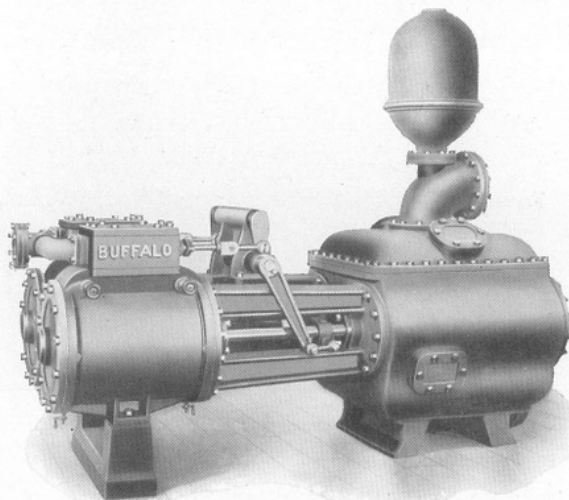


Fig. 718

### STANDARD FITTINGS

**Steam Cylinders:** Cast iron separate from cradle on all sizes. 150 lbs. working pressure.

**Steam Valves:** "D" slide valves.

**Valve Gear:** Duplex type, cast steel valve rod heads, rocker arms, links and levers.

**Steam Pistons:** Cast iron, snap rings.

**Piston Rods:** Steel.

**Stuffing Boxes and Glands:** Stud type.

**Water End:** Cast iron, brass lined cylinders, suction valves below and discharge valves above pistons.

**Water Valves:** Bronze disc type (rubber if ordered) bronze stems, brass springs.

**Valve Seats:** Bronze, screwed into decks.

**Water Pistons:** Cast iron, removable follower type.

**Wrenches:** All necessary special wrenches.

### EXTRAS

Steam cylinder lagging; pressure or speed governor or regulator; sight feed or mechanically operated lubricator; base plate.

Code Words with Steel Piston Rods, and Iron Pistons	Figure Number	Diameter of Steam Cylinders, Inches	Diameter of Water Cylinders, Inches	Stroke, Inches	Piston Speed, Feet per Minute	Capacity, Gallons per Minute	Horse Power Boiler at 35 lbs. Evaporation that Pump will Feed at Slow Piston Speed	Diameter of Pipes, Inches				Approximate Floor Space, Inches
								Steam	Exhaust	Suction	Discharge	
DFADN	718	10	6	12	100	291	1400	2	2 1/2	7	5	31x94
DFABT	718	12	6	12	100	291	1400	3	3 1/2	7	5	31x94
DFAGK	718	10	7	12	100	400	1900	2 1/2	2 1/2	7	5	31x94
DFALC	718	12	7	12	100	400	1900	2 1/2	3	7	5	31x94
DFAMY	718	12	8	12	100	520	2500	2 1/2	3	8	6	36x94
DFANT	718	14	8	12	100	520	2500	3	4	8	6	36x94
DFARK	718	12	8 1/2	12	100	588	2800	2 1/2	3	8	6	36x94
DFBAG	718	14	8 1/2	12	100	588	2800	3	4	8	6	36x94
DFBEH	718	12	9	12	100	660	3100	2 1/2	3	8	6	36x94
DFBFU	718	14	9	12	100	660	3100	3	4	8	6	36x94
DFBIJ	718	16	9	12	100	660	3100	3	4	10	7	42x98
DEBIY	718	14	10	12	100	815	4000	3	4	10	7	42x98
DFBNA	718	16	10	12	100	815	4000	3	4	10	7	42x98
DFBOK	718	18	10	12	100	815	4000	3	4	10	7	42x100
DFBSE	718	16	12	12	100	1170	5500	3	4	10	8	48x100
DFBUL	718	18	12	12	100	1170	5500	3	4	10	8	48x100
DFBWI	718	18	14	12	100	1595	7500	3	4	12	10	52x105
DFBYM	718	20	14	12	100	1595	7500	4	5	12	10	52x105
DFCAH	718	18	12	18	110	1290	7000	3	4	12	10	50x116
DFCBU	718	20	12	18	110	1290	7000	4	5	12	10	50x116
DFCEJ	718	20	14	18	110	1760	9500	4	5	12	10	50x116

Add Code Word JCKAX for Bronze Piston Rods.

Add Code Word JCKDP for Brass Water Pistons.

Add Code Word JCKEV for Brass Lined Stuffing Boxes and Glands in Water End.

## BUFFALO COMPOUND DUPLEX PUMPING ENGINES

**Piston Packed: 150 lbs. Pressure**

**Use:** General service up to 150 lbs. Best adapted for liquids fairly free from grit. More suitable for high suction lift than plunger pumps. Will handle thick or thin, hot or cold liquids.

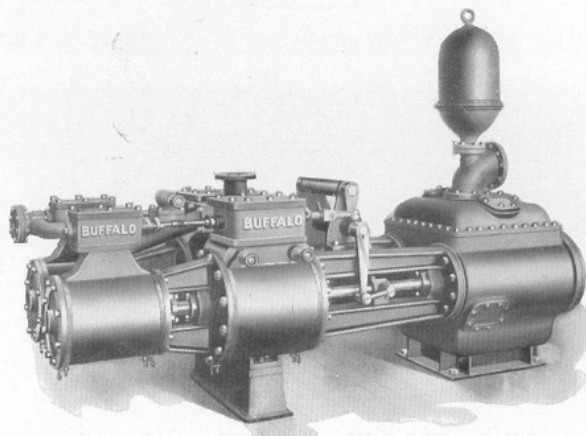


Fig. 719

### STANDARD FITTINGS

**Steam Cylinders:** Compound arrangement, cast iron, separate from cradle on all sizes. 150 lbs. working pressure.

**Steam Valves:** "D" slide valves.

**Valve Gear:** Duplex type, cast steel valve rod heads, rocker arms, links and levers.

**Steam Pistons:** Cast iron, snap rings.

**Piston Rods:** Steel.

**Stuffing Boxes and Glands:** Stud type.

**Water End:** Cast iron, brass lined cylinders, suction valves below and discharge valves above pistons.

**Water Valves:** Bronze disc type (rubber if ordered) bronze stems, brass springs.

**Valve Seats:** Bronze, screwed into decks.

**Water Pistons:** Cast iron, removable follower type.

**Wrenches:** All necessary special wrenches.

### EXTRAS

Steam cylinders lagging; pressure or speed governor or regulator; sight feed or mechanically operated lubricator; base plate.

Code Word with Steel Piston Rods and Iron Pistons	Figure Number	Diameter of High Pressure Steam Cylinders, Inches	Diameter of Low Pressure Steam Cylinders, Inches	Diameter of Water Cylinders, Inches	Stroke, Inches	Piston Speed, Feet per Minute	Capacity, Gallons per Minute	Diameter of Pipes, Inches				Approximate Floor Space, Inches
								Steam	Exhaust	Suction	Discharge	
DFDYP	719	8	12	6	12	100	291	1½	3	7	5	42x122
DFECS	719	8	12	7	12	100	400	1½	3	7	5	42x122
DFELD	719	8	12	8½	12	100	588	1½	3	8	6	42x122
DFEMT	719	9	14	8½	12	100	588	2	4	8	6	42x122
DFENK	719	10	16	8½	12	100	588	2	4	8	6	44x125
DFERM	719	8	12	9	12	100	660	1½	3	8	6	44x122
DFESP	719	9	14	9	12	100	660	2	4	8	6	44x122
DFGAL	719	10	16	9	12	100	660	2	4	10	7	44x125
DFGCE	719	8	12	10	12	100	815	1½	3	10	7	44x122
DFGEM	719	9	14	10	12	100	815	2	4	10	7	44x122
DFGIN	719	10	16	10	12	100	815	2	4	10	7	44x125
DFGKO	719	12	18	10	12	100	815	2½	4	10	7	47x128
DFGNU	719	14	20	10	12	100	815	2½	5	10	7	48x135
DFGOP	719	8	12	12	12	100	1170	1½	3	10	8	44x122
DFGSY	719	9	14	12	12	100	1170	2	4	10	8	44x122
DFGUR	719	10	16	12	12	100	1170	2	4	10	8	44x125
DFGXA	719	12	18	12	12	100	1170	2½	4	10	8	47x128
DFGYS	719	14	20	12	12	100	1170	2½	5	10	8	48x135
DFHAM	719	9	14	14	12	100	1595	2	4	12	10	50x132
DFHCI	719	10	16	14	12	100	1595	2	4	12	10	50x134
DFHEN	719	12	18	14	12	100	1595	2½	4	12	10	50x140
DFHGO	719	14	20	14	12	100	1595	2½	5	12	10	50x140
DFHIP	719	12	18	12	18	110	1290	2½	4	12	10	50x154
DFHKU	719	14	20	12	18	110	1290	2½	5	12	10	50x154
DFHNY	719	12	18	14	18	110	1760	2½	4	12	10	50x154
DFHOR	719	14	20	14	18	110	1760	2½	5	12	10	50x154

Add Code Word JCKAX for Bronze Piston Rods.

Add Code Word JCKDP for Brass Water Pistons.

Add Code Word JCKEV for Brass Lined Stuffing Boxes and Glands in Water End.



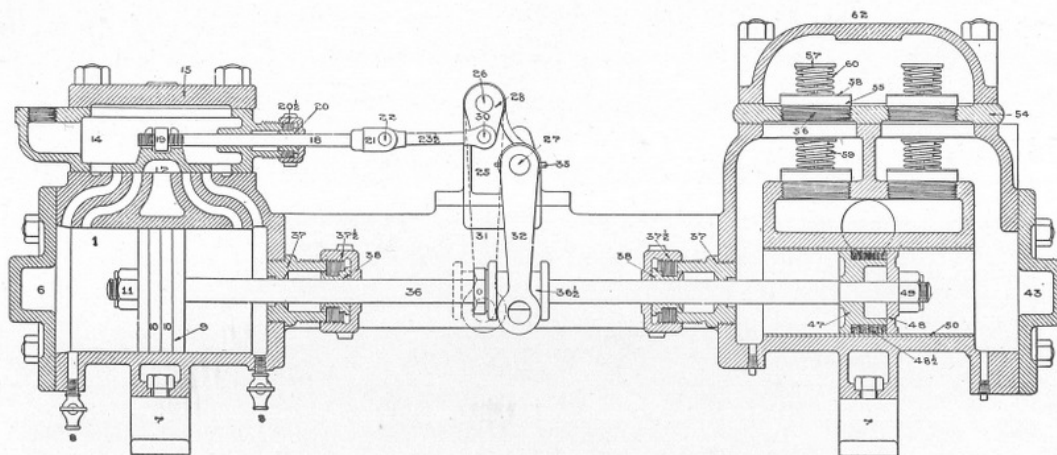


Fig. 765  
Small Duplex Piston Packed Pump  
Sectional View

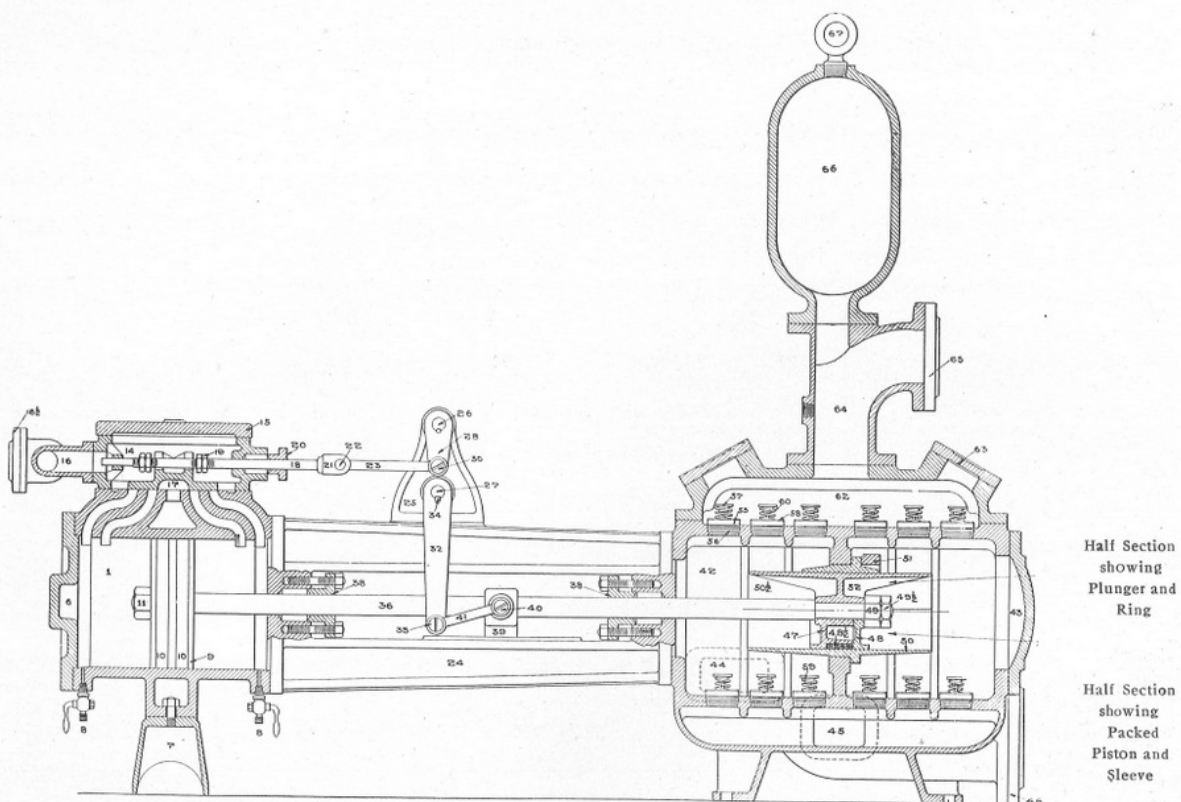


Fig. 766  
Large Duplex Piston Packed Pump  
Sectional View

NOTE: Plunger and Ring Pumps are furnished only in sizes 12 in. stroke and larger, and only on special order.

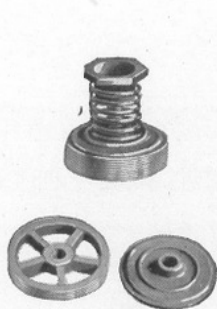


Fig. 543

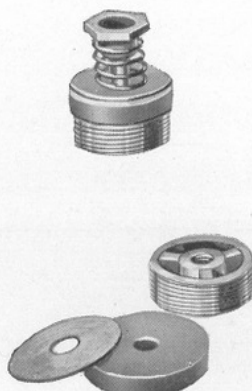


Fig. 540

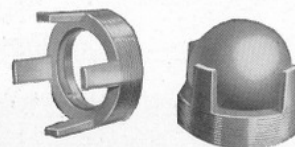


Fig. 547

**Fig. 543:** Buffalo Brass Disk Valve. All parts are of brass, or for special service can be made of iron. The brass valve plate is accurately surfaced to fit water tight against the seat and "cupped" to have ample strength against the water pressure. This is standard equipment for piston packed pumps except where otherwise specified.

**Fig. 540:** Buffalo Rubber Valve. Valve is soft, medium, or hard rubber. Seat, bolt and spring are brass. Furnished on special order only.

**Fig. 547:** Buffalo Ball Valve. Ball and seat are brass, the ball being hollow to get lightness. For special service can be made of iron.

## IMPORTANT NOTES

### REGULAR FITTED

Brass liners in water cylinders, steel piston rods, iron glands and iron water pistons

### IRON FITTED

The term "Iron Fitted" is understood to signify that no brass whatever is to be used in the water end of the pump, and that iron valves, seats, bolts and springs are to be used. This construction is necessary when pumps are used in handling some chemicals. Furnished on special order only.

### COMPANION FLANGES

Companion Flanges to fit will be furnished on all flanged openings, 6 inch and smaller, tapped ready for connecting pipe.

### PACKING FOR SHIPMENT

Pumps are skidded, exposed machined parts slushed and valve motions crated. Small fittings and wrenches are boxed and nailed to skids.

**For Export:** Pumps are blocked under steam and water ends at bottom of cylinders, thereby raising the feet off the bottom of the box, i. e., "floating." Wedges are placed at ends of box to prevent shifting.

### CUSHION VALVES

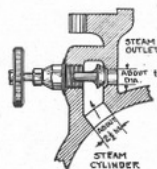


Fig. 2

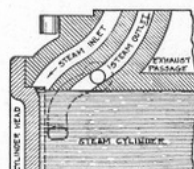


Fig. 3

Cushion Valves are furnished on steam cylinders of all duplex steam pumps 12" stroke and larger. On compound

Steam Ends, the cushion valves are placed on the Low Pressure Cylinders only. As will be noted from above this valve is located so as to positively retain a certain amount of cushion steam. The amount of cushioning effect can be regulated to some extent by valve handles on which appear arrows showing which way to turn valve to open and lengthen pump stroke or to cushion.

### PISTON AND GLAND PACKING

**Piston Packed Pumps:** On 10 inch stroke and smaller "spiral" packing is used in water pistons on both regular and brass fitted pumps. On larger sizes, square linen packing.

Flax packing is used in the piston rod glands during shop test block run, but this is removed before shipment. Prices do not include packing for glands, but packing for the water pistons is left in place and shipped with the pump.

### TESTING

All Buffalo Pumps are given thorough test and carefully adjusted before shipment.

### CATALOG RATINGS

Catalog ratings show maximum speed at which pumps should run. For constant service lower piston speeds should be used in order to reduce wear and tear on the pump.



**SCANNED BY: AEM OF LOCKPORT NY USA**

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**NOTE: ORIGINAL DOCUMENT HAD WATER DAMAGE**